



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Jonathan J. Lynch )

Application No: 10/663,975 )

Filed: 09/16/2003 )

For: "Low Profile Slot Antenna..." )

Group Art No.: 2821

Examiner: Nguyen, Hoang V

Re: Rule 312 Amendment

Our Ref: B-4545NP 620672-7

Date: May 31, 2005

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This paper is an amendment filed under Rule 312.

Claim amendments start on page 2 of this paper, while Applicant's remarks appear on page 10 of this paper

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*[Signature]*

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31. (Previously presented) The antenna structure of claim 30 wherein the polygonal configuration of each conductive element is a square and wherein the square conductive elements are arranged with a common pitch in said array.

32. (Previously presented) The antenna structure of claim 31 wherein the waveguide opening in the conductive plane is rectangular, having a breadth which is about 0.5 of a wavelength to one wavelength of the operating frequency of the antenna structure and a width which is no greater than the common pitch of the conductive elements in the array.

33. (Previously presented) The antenna structure of claim 32 wherein the width of the waveguide opening in the conductive plane is approximately equal to a spacing between adjacent ones of the conductive elements in said array.

34. (Previously presented) The antenna structure of claim 26 wherein the waveguide driving element has walls adjacent an aperture thereof, which walls have a rectangular configuration adapted to mate with the waveguide opening in the conductive plane.

35. (Previously presented) The antenna structure of claim 26 wherein the array of conductive elements is spaced from the conductive plane by a distance which is no greater than 10% of a wavelength of an operating frequency of the antenna structure.

36. (Currently amended) A method of making an antenna comprising:

(a) providing a high impedance surface, the high impedance surface having a conductive plane and an array of conductive elements spaced from the conductive plane by a distance which is no greater than 25% of a wavelength of an operating frequency of the antenna structure, the conductive plane having a waveguide opening therein; and

(b) disposing a waveguide adjacent the waveguide opening in the conductive plane.

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